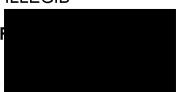
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Chapter XI X Transition from EAM to EDP



#### A. Background

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OCR response with regard to its information handling problems for the years 1957 to 1967 could be characterized most succintly as "accomodation." OCR had engoing several ongoing, EAM-based information systems of proven merit: the Intellofax System, the Special Register's system for handling specially controlled intelligence documents, and the individual systems of the Biographic, Considered Graphics, and Industrial Registers. For many years, these were the top systems of their kind. To keep these systems the best, OCR had to maintain constant vigilance with regard to modern equipment and processing developments. At the same time, the sheer volume of incoming material and the resultant mammoth files, together with the mounting pressures to cut costs and functions wherever possible were adding to OCR's headaches.

In response to a request from the DDI to cost the operations of OCR, the AD/CR stated in January 1959;

The problem of determining the relative priority between our various functions and programs is a particularly difficult one which we cannot alone determine. Whenever collection takes place in any field by any member of the intelligence community and certain non-intelligence agencies, work load is created for Central Reference. It makes little sense to collect material and then do nothing with it. Likewise, we must stand ready to respond to the demands of the intelligence producing components of the community. No geographic area or substance of intelligence value is exempt from present and prospective interest. In short, we must be prepared to answer any inquiry made of us. 1/

The other pressure parallel to those above and to which OCR had to accomodate was that of the computer. This effort at accomodation for at least the years 1963-1967 kept OCR off balance. It had to walk a wildly swining tight-rope. The ultimate goal was transition to the perfect, computer-based information handling system with

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high speed, relevant recall, much fewer operating people and all produced at lower cost (an untested ideal that existed on paper and in conversation for some time).

Obviously, only EDP equipment could produce the basic ingredients for such a system.

OCR recognized this at an early date and was pushing for study of computer application to its information handling problems. The price OCR had to pay for trying to achieve all the above simultaneously included a) giving up a familiar system, b) developing an untried system, c) trying to keep up the morale of a staff constantly being reduced and uncertain as to the shape of their future work, and d) overcoming the reluctance of Agency management to agree on the timing for the installation of computers to improve OCR information handling.

The arrangement of this chapter will include a recapitulation of the major changes in OCR's EAM systems and developments leading toward increasing use of the computer, a summary of Project CHIVE\*, comments on related studies, and the final organizational changes in OCR as far as this history is concerned.

B. Changes in OCR's EAM Systems

of some of the files and services of OCR in FY1964, for example, and an intellofax files contained more than 13,000,000 cards from which 700,000 references were by had furnished in response to 2,540 requests; Special Register more than 20,000,000 cards from which over 10,000,000 references, 175,000 documents were provided to fill some 8,000 requests; c) Biographic Register supplied 1,500,000 references and Graphics Register 450,000 photographs. 2/ This was an information handling problem was secondary in Cold with a court of that was approaching the limits of what EAM equipment could handle and OCR known it.

Yet, OCR could not abandon this sizable outlay of its energies. It had to study alternatives, improve its ongoing systems as possible, and prepare for the inevita\*The Office of Computer Services (OCS) will issue a complete history of this project.

bility of the computer. Reported earlier was an OCR experiment with MINICARD and the decision not to adopt it as a possible system. The most succint comment on the reasoning behind this decision was made by the AD/CR in his capacity as Khairman OCC CODIB in a report of 30 June 1960 (CODIB-D-23/1);

- 1. Attached for your information is a summary case history of the limited test of MINICARD as a substitute for the OCR Intellofax System.
- 2. Our findings are negative. This conclusion is based only in part on our findings that the MINICARD system would not enable us to give substantially superior reference service over that possible with our present system. Weighing very heavily were the present limitations on staff, on space, and on money; these operating assets have been appreciably reduced since the inception of the MINICARD project. Moreover, this reduction has occurred in the face of an increase in demand for OCR information services generally, but a relative decline in the demand for literature searches.
- 3. The decision not to adopt MINICARD as an operational system in OCR does not affect in any way the application of this system elsewhere in CIA. MINICARD has been selected by the CIA Photographic Intelligence Center as a subsystem of its data handling system. As a consequence of the OCR decision, MINICARD equipment, spares and supplies will be released to PIC to augment their proposed MINICARD installation. 3/

Following the conclusion of the MINICARD study, OCR's Automation Development Group and others connected with the test, conducted further investigations into revisions of the Intellofax System. Greater uniformity of coding and greater selectivity as a means of achieving a higher rate of relevance among the documents recovered by machine searches, and experimentation to develop better reproduction equipment were several areas of development. Enhanced by the efforts of CODIB were OCR's own, constant collaboration with receptive members of the Intelligence

of its kind working in the community. Successive revisions of the Intelligence
Subject Code in 1960, 1962, 1964 and even in 1967, plus the many special arrangements

other figure

made for such cooperative efforts as provision of documents early in the processing

stage, Actifilm cards from the Army, and the use by NSA of OCR's intellofax cards

attested to the considerable interest shown in making the Intellofax System almost as

an Intelligence Community information and document retrieval system. Though no such study has been found to substantiate this statement, informal comment iindicated that savings of several hundred thousand dollars to the Intelligence Community (including CIA itself) were made possible by the liberal availability of OCR's material, techniques and know-how.

previously, including the Photostat Expediter, Flexowriter, and the less than success
ful Videograph product. In Chapter VII, the DARE experiment for reproducing reducedsize images of the first page of documents on IBM cards by electrostatic process was

termed successful and the program became operational in 1964. Later in 1965 the

installation of five Filmsort 2000 machines and three companion Quadrant Printers

speeded up processing by producing aperture cards automatically.

In the meantime, actual OCR use of an IBM 1401 computer in the Office of Computer Services was already taking place. The Ground Photography Index of GR and the card input portion of the Intellofax System were successfully programmed for the computer and resulted in man-hour savings and faster input. OCR was taking some steps to get into the computer world, but they were only partial staps and the computer itself was not yet in OCR.

#### C. Preparation for the Computer

#### 1. Statements of OCR Needs

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As reported in Chapetr IV, OCR had made its first formal suggestion in 1958

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for the consolidation of the food computer needs by recommending a study by the

of Agency needs, including the feasibility

CIA Management Staff, with the possibility of establishing a Computer Center in

the new building. 4/

The AD/CR presented a CRAG-supported study to the DDI in August 1959. The paper included possible computer applications for most of the DDI Offices. The study

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concluded "that the current rapid evolution of the computer and the present level of its capabilities in information processing offer significant potential support for and improvement in the DDI area." Recommendations included: a) developing staff competence in the computer art, b) undertaking an EDP feasibility study for the DDI area, and c) fowarding this report to the CIA Automatic Data Processing Committee. 5/ another

On 31 May 1961 the AD/CR submitted to the DDI a memorandum on computer needs, in which he stated that he was in general agreement with the report of the DDI Automation Staff (see below) of 21 April 1961. He made the following important points; a) if there was to be no CIA Computer Center, he opposed strongly the creation of another CIA operational component with responsibility for managing a DDI computer facility; b) he urged that DDI developments in the EDP field be a part of USIB activities in the area, maintaining the necessary flexibility in line with CODIB recommendations; c) he/recommended that CRAG be given responsibility for preparing a draft DDI position on the statement of functions for the CIA Automatic Data Processing Staff, and that CRAG prepare specific short- and long-term objectives for DDI approval; and d) although accepting in principle the leadership of the CIA ADP Staff in the exploratory phase of systems development and experimentation in the DDI area, by the same token he recommended that any computer center resulting from such exploration be placed as an operating component under AD/CR.  $\underline{6}$ /

#### 2. Coordination of CIA Computer Activities

By mid-1959. CIA management had taken cognizance of the need for a coordinated 25X1A approach to the problem of harnessing the computer and other EDP applications. An Agency Data Processing Committee (ADP) was established, with the AD/CR representing was appounced as Acting Chairman, later the DDI. 7/ In July, 1960, had already been appointed Chief of the 🍝 Chairman. Early in 1960,

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and Chief of the DDI Automation Staff, responsible to the DDI.

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In this latter capacity, presented the initial survey of DDI computer needs on 21 April 1961. 8/ The survey included summaries of an intensive six-week study of automation requirements by teams of specialists from

supported by an OCR survey group from \$2, CIA Library
the Special Register 25X1A

Document Division and \$2. Both

Automation Staff to assist it in the formulation of a DDI plan.

It is important for an understanding of future developments that the rapid-fire components
changes in the Agency, jockeying for control of computer developments be closely chronicled. Effective 1 June 1961, a CIA Automatic Data Processing Staff was established under the Deputy Director for Support (DDS). 11/ This staff was "responsible for providing Agency-wide leadership and staff assistance in the development and 25X1A coordination of automatic data processing activities."

Was appointed Chief of the Staff and also Chairman of the CIA Automatic Data Processing Committee. As a result, the DDI Automation Staff and the CIA Management Staff were abolished, together with the OCR Automation Development Group in October, 1961. OCR provided 25X1A

Processing Staff but also such promising OCR people as

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12/ Some members of other offices, as well as contract personnel were recruited for this staff.

<sup>\*</sup> Note divergent conclusions of AD/CR at end of Section 1 above.

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The DDI (Amory) in September and the DD\$ (L.K.White) in October 1961 approved the DDI Automation Staff proposal for developing an EDP program for the DDI, scheduled to begin January 1962.  $\underline{13}$ / The formal name for this program was Project

14/ described in the following section.

The CIA Automatic Data Processing Staff issued a paper on 2 January 1962, Development Program for the DD/I. The portion of this paper with the greatest impact on OCR described the following three principal elements of the program a) establishing the DDI Computer Center; b) implementing tasks on the computer in direct support of DDI analysts; and c) designing the document and information retrieval system.15/

The CIA Automatic Data Processing Staff prepared many progress reports and "think-pieces" during the course of 1962-1963. One of immediate concern, to OCR and requested by it, was "a study of OCR's scientific literature exploitation program at the Library of Congress with a view to determining the desirability of providing machine support."

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prepared the study in November 1962. The team reviewed pertinent operations at the The Brographic Begit la

Library of Congress, R, and the

The conclusions included that an interim automated system be studied, 25X1A the experiment be performed at the Library of Congress, user requirements be determined and the interim automated system be prepared by ADPS. To begin system implementation of the proposal a full-time study was recommended involving two systems analysts from ADPS and one from BR. After the investigation was completed, two programmers woule

be phased into the operation. 16/

25X1A Action on this study was deferred due to the priority requirements of the effort; control of open literature for EDP retrieval/was specifically 25X1A excluded from responsibilities. Related developments that followed included

\*Not an acronym

the absorption of FDD into OCR in 1963, and the termination in 1966 of OCR support to the Library of Congress for publication of the Monthly Index of Russian Accessions.

The Automation Data Processing Staff was transferred in August 1963 from the DDS to serve the newly# established Deputy Director for Science and Technology (DD/S&T). The staff became the nucleus of the Office of Computer Services with Becker as Director. 17/

Further impetus to get Agency computer activities rolling with effective speed came from the DCI (McCone) himself, via Action Memorandum A-375, 28 April 1964, from the Executive Director (Kirkpatrick) to the DDI (Cline). Although the subject of this memorandum was SCIPS (Staff for the Community Information Processing Study, which issued its final report in 1963), the timing, tone and content are perhaps even more pertinent to OCR's future:

The DCI has directed that the Central Intelligence Agency shall develop the best possible system for the handling of information, indexing and data processing. He wants the Agency system (or systems) to be the model for the intelligence community, and feels that by this method we will achieve more than through any organizational devices as proposed by SCIPS. Would you take all necessary steps to implement this and advise me at least on a monthly basis. 18/

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On 15 May 1964 the DD/S&T requested clarification of the above memorandum, and in his reply of 22 May 1964 the Executive Director stated;

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The DCI wants CIA to have the best possible information handling systems. This is not limited to the but is Agency-wide and includes the continued development of the NPIC and the DD/P systems.

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resources. 19/

The action taken by USIB is not consistent with this objective inasmuch as USIB did not adopt the over-all SCIPS proposal but did approve the much more limited approach recommended by CODIB. This is simple recognition of the fact that CIA is after all not only part of the Intelligence Community but has leadership responsibilities in this field as well.

As indicated by A-375 and by reason of providing the CODIB Chairmanship, the over-all responsibility for coordinating both the Agency effort and the Community effort lies with the DD/I, and more specifically with the DD/P, DD/S&T and NPIC, will resolve conflicts which may arise from competition for scarce

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Under the chairmanship of Assistant DDI the Project 375 Committee was formed consisting of representatives from OCR, OCS, ORD, NPIC and DDP. The Committee reviewed Agency information handling projects and presented two quarterly progress reports (18 November 1964 and 8 March 1965) 20/ to the Executive Director-Comptroller. The reports included comments on mamy aspects of the various Agency 25X1A components handling of intelligence information, including Project developments.

The total history of the use of computers in the Agency will be treated elsewhere it is hoped; segments have been included in the history of OCR to indicate the role OCR played and the effect other components had on OCR developments. The documentation with regard to Agency EDP coordination activities for the latter half of 1965 and the first half of 1966 available to OCR is very limited. The changes in CIA top administration may have had something to do with the lack of this type of documentation for the period mentioned. Admiral Raborn became DCI vice Mr. McCone on 28 April 1965; Col. L.K. White was appointed Executive Director-Comptroller 5 July 1965 vice L. Kirkpatrick. 21/

In July 1966, Agency Notice HN7 - 4, provided for the establishment of an Information Processing Staff in the Office of Planning, Programming and Budgeting (PPB) to assist the Executive Director-Comptroller (White) "in formulating policy direction for all Agency information processing activities which involve the use 25X1A of automatic data processing equipment." 22/ was designated in September 1966 Chief, Information Processing Staff, PPB, 23/ and Information Processing Coordinators (IPC) were established in each Directorate. The DD/CR 25X1A was the IPC for the DDI, and the Director of the Task Force was replaced by in April 1967; the program was a continuing one in July, 1967. 25/

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D. Project

The guidelines for establishing a computer center for the DDI had been established. Historically, Project had three major tasks. Task I - to establish a DDI computer center Task II - to implement applications on the computer; and Task III - to plan and design a new document/information retrieval system for the DDI. 26/

Task I was achieved in January 1963 with the establishment of the computer center utilizing an IBM 1410/1401 system at a temporary location in headquarters. Later more permanent quarters were occupied and additional equipment installed. As part of Task II, varied operations were begun on the computers, including such

applications as 25X1B

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Task III was expanded to include the intelligence information retrieval 25X1A requirements of the whole Agency and this became the main focus of as a four phase effort. Phase I was an extensive fact-finding survey, Phase II was After a satisfactory level of confidence in the new **ILLEGIB** system design, Phase III was to begin the initial segment of the system, and techniques and procedures has been attained, the system was to (Phase II) take over operational responsibility for processing a defined segment of the input flow, with corresponding service to analysts. 28/

1. Phase I

The report of the Phase I effort was issued August 1963 and summarized the findings of the survey.  $\frac{29}{}$  The major conclusions were

a) that there is a need for greater speed, depth, and breadth of access to the total Agency information resources and b) that more efficiency is needed in information processing to counterbalance the costs of increased depth and breadth of information coverage and access. As corollaries of these basic conclusions#

- -both central and analyst files are needed,
- -central files and processes should be integrated,
- -computers can play a significant, but not a dominant role in intelligence information processing, 2x2

should focus on the design of a central system. 3o/

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In August 1963, the DDI established a Evaluation Group (CEG), composed of the AD and EXA/AD of OCR, and refpresentatives of various Agency offices, to 25X1A review the Phase I report. CEG completed its analysis of conclusions in October and recommended that the project continue into Phase II "with careful testing of system feasibility prior to implementation." 31/ CEG recommended 25X1A further that the management responsibility for be vested in the DDI. 32/

Also early in August 1963, as stated previously, the Office of Computer Services 25X1A(OCS) was established with as AD/CS, under the DD/S&T. Instead of an Joint became am OCR/OCS program, together with contract people. on 13 August 1963 requested the transfer of Project| to his directorate from the DJI, "pursuant to the decision of the Deputy Director of Central Intelligence to transfer the responsibility for Project DD/I to the DD/S&T." The DDI (Cline) concurred, with the expressed understanding 25X1Athat this action would not prejudice the return of to the DDI area. 33/ In the ADICS October 1963 commented on the CEG report above, stressing in particular the management of issue. He recommended the appointment of a DDI/ as a subordinate of the AD/CR, to represent him and the DDI in management matters, to work closely with OCS personnel and to be located with the EDP systems he proposed designers (both OCS and TIBM); furthermore, that the AD/CR chair a committee to review progress and resolve problems. 34/

A Memorandum of Understanding Between OCR/DD/I and OCS/DD/S&T, 15 November 1963, was signed by the two Descent and approved by their respective Deputy Directors. The memorandum intended to clarify certain misunderstandings, primarily administrative, between the two offices. The following were agreed upon a DD/S&T would provide Support Staff with two positions for duration of Phase II, b) either

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AD/CR would supply or AD/CS would detail people from their own 70 to man the Support Staff and while members of this staff would be solely responsible to 25X1A Officer; c) the Support Staff would assist the DDI/ in performing functions with respect to Phase II as outlined; d) CEG conclusions see above would provide general policy guidance to both OCR and OCS; e) Support Staff would be selected with the approval of both As, would be collocated with OCS systems designers and staff people would be permitted to select their own career designations.35/ 25X1A DDI Notice N.50-100-39, 6 April 1964, announced the appointment of EXA/AD/CR

as DDI GUTUE Officer in addition to his regular duties. His new responsibilities included supervision of a Support Staff (CSS), approval of developmental design plans and regular communication with user components to ensure 25X1A

maximum understanding and support of

OCS, was designated

Technical Director, to conduct the system design effort, produce documentation and manage contractual activities. Furthermore, a CIA Committee\* was to be 25X1A established to constitute the group to evaluate the system design recommendations (Phase II) before the initial system implementation (Phase III). 36/

While 🚁 this tug-of-war was going on, the OCR-OCS-IBM people in the groups were contributing by working on dozens of studies and reports to indicate progress in varied assignments. Some of the studies were addressed to

authority files and other working aids to support input and retrieval; alternative configurations and procedures for input transcription; identification of, and methods for, exploiting machine readable data; investigation of dissemination practices including flows, timing, volumes, and operating costs; analysis of alternative document delivery systems; index representation of the contents of documents and indexing procedures, file structures, and query languages. 37/

OCR and OCS were moving into Phase II of Project which would result in a long (seven volumes) and not easy report to read. The complexity of the problem

\*There is no available documentation to show that this Committee ever met,

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Philosophies and programs were to undergo significant changes as tests and opinions were given to determine what was feasible, and would what was feasible be possible with manpower and fiscal resources that CIA was willing to dole out for this project.

#### 2. Phase II

Before proceeding with the summary details of Phase II accomplishment, another, chronological factor of concern was the interjection of the Executive Director-25X1A

Comptroller (Kirkpatrick) into the time schedule during June 1965. At several 25X1A

meetings between Kirkpatrick, persons concerned with management and Agency fiscal experts, Kirkpatrick wanted to consider how to accelerate Phase III (actual use of the new system). He pointed out that this was not just an OCR problem, "the Agency front office wants a working system as fast as possible, that Agency managers should be informed that this is desired and that all are involved."

Specifically, Kirkpatrick directed OCR to develop a total manpower requirements proposal, to get together with the Office of Security on the security problems, raised by the new system, and to evaluate the Phase II report by 1 August. 38/

The final report of Phase II (system design) was completed in July 1965, in seven volumes. The volumes dealt with a description of the proposed system, management data, the design approach, a description of indexing, retrieval and computer procedures, recommendations for a document delivery system, and an implementation plan. 39/

According to the memorandum from the AD/CS transmitting the Phase II report to the DDI, the following were the recommendations in summary form;

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a.the DD/I concur in the basic design and implementation plan as outlined in the Phase II report and approve proceeding into Phase III, b.OCR establish an intial component to test design and implementation

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concepts,

c.the initial component be operated in a simulated 'live' environment in order

to provide a demonstration of system feasibility and capabilities,

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d.the EDP programs required to support the initial component and integrate its functions with extant OCR man/machine systems be prepared and coordinated with initial component implementation.

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e.OCS integrate requirements for the first two years of Phases III and IV Approved to a series of Phases III and I

determine the needs and ultimate course to follow in the hardware/software elements of the system, 25X1A g. the central reference complex prepare for the introduction of the deveraging system through reorganization of functions and selective centralization of files. 25X1A h.OCR study the results of the document delivery analysis and obtain a document image system which will meet objectives, i.OCR also consider application of EDP techniques, on a special project basis, to current functions which interact with the initial component and 25X1A j.the DD/I and DD/S&T allocate manpower and funds required to perform the tasks required under items a - i above. 40/ 25X1A on 9 September 1965 advised the DDI to respond to the AD/CS The D/CR recommendation recommendations by approving (a) above noting that while OCR in general concurred, it had certain reservations on design concepts and implementation (explained in a separate attachment to the AD/CR's paper), (b) - (e) and (g) - (i), and (f) was to be clarified by stating that it was DDI policy to procure its own equipment.  $\P I/$ The DDI so notified D/CS on 16 September 1965. 42/In the same memorandum referred to in the previous paragraph, 43/ the D/CR 25X1A reported preliminary progress made in the area toward Phase III (testing the 25X1A new system). He stated; 25X1A we have already combined under OCR management the Task Force (CTF), consisting of the OCS/Development Division (on detail); the OCR Systems Analysis Staff; the embryonic **process and the machine-assisted translation** project ALP; and a cadre to provide continuity in various procedural, filebuildbuilding, selection, indexing and other tasks as we evolve from the initial 25X1A branch to other geographic areas. Many of these tasks are already under way, since they respresent areas of development in ADP planning which we would explore regardless of the specific design proposal. As you know, we have estimated the additional OCR manpower requirements at 54 slots and are taking these from current OCR operating components while requesting an increased T/O for FY1967. With OCS committed to provide 21 slots, the Task Force for Phase III will constitute a 75 man staff effort. Later in the same memorandum, and in response to the earlier achievement of an operational capability urged by the Executive Director-Comproller \*\* the D/CR stated would he will accomplish this in three ways! \* Title changed from AD/CR to DICR, July 1965 \*\*See above

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a) by earlier implementation of the new document delivery (microstorage) system and its immediate application to all receipts, not just those on b) by development within a few months of a computer-backed [KWIC (keyword in context) index to document receipts, particularly for current awareness control; and c) by utilization of the codre mentioned above to develop the tools for expanding more easily to other geographic areas.

The D/CR request for additional positions to meet the newest demands of was turned down by the Agency's Budget Program Analysis and Manpwer (BPAM) unit. The D/CR was forced therefore to curtail certain on-going activities to provide the 25X1A promised support to The proposed curtailments were announced to the DDI 28 September 1965, a) reduce indexing of collateral documents by 25%; b) reduce dissemination; c) reduce depth indexing of special intelligence reports; d) reduce biographic servicing on Germany by 25%; shave other biographic services; e) reduce document search, installation files services, film and photographic services slightly; f) shift printing of priority FDD publications to PSD; and g) reduce programming for current EAM machines by a third. 44/

#### 3. Phase III 25X1A

The Task Force (CTF) entered Phase III, variously referred to as detailed design and implementation, or in previous paragraphs, as testing the new system, on 25X1A

1 October 1965, with the 54 OCR and 21 OCS positions.

OCS, was appointed Director of CTF, reporting to the AD/CR. 45/ Staffing CTF was a problem for OCR as it had few people with the required background for planning, designing and testing a computer-based document/information retrieval system. An extensive 25X1A training program for personnel was published and put into effect to include systems analysts, information analysts, content indexers, programmers and the necessary clerical support thes.

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Two thrusts of CTF were a) preparing the necessary studies and reports, and b) designing and tesing the EDP system being prepared. Some of the work performed in

the first area included the preparation of authority lists to support indexing functions; resolution of the complex security problem raised by augmenting records of different classifications in the all-source environment required by the ultimate system; provision for system control of maps and graphics; study of the nature and extent of logical dossiers; preparation of flow charts of input procedures and transactions; and establishment of selection criteria for system input.

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In the design and testing area, the basics had been completed for the system called CAPRI (Centralized Automatic Processing and Retrieval of Intelligence, sometimes referred to as Automatic Processing and Retrieval of Intelligence). This generalized computer system, based on IBM System/360/65, was to have the ability to accept as input a wide variety of data, to create automatically new files from existing files, and to process files with multi-level security classification.

Testing was also begun on the CDC Page Reader (915 System), an optical scanning input device. People from CTF were also assisting in the evaluation of the ALP (Automatic Language Processing) System, reported in Chapter VIII; the experiment was terminated and the system rejected in October 1966. A special staff, Integration and Plans Staff, was established in CTF to improve system scheduling, integration, and planning procedures, and began development of a Management Information System (MIS) 25X1A for and eventually for OCR.

In line with the decision to concentrate on as the first area to be tackled in testing portions of the new system, there was developed a listing 25X1A and shallow index of collateral document receipts on called SKAN (Subject Keyword Announcement). The system, using the Optical Character Reader, began operation in August 1966 and issued a weekly listing disseminated to 25 selected analysts as a sample of current intake.\* The two persons primarily responsible for SKAN prepared

\*Documents listed were no older than 8 days from date of receipt.

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The paper describes the many changes SNAN had to go through actually early thinking was based on using FRANTT LyApproved For Release 1999/09124 LC1A-RDP84-00951R0002001/10001-9 its own problems of down time and printing delays. **ILLEGIB** a historical summary of the project in 25X1A In May 1966 the Director of the Task Force (CTF), appointed Deputy Director, OCS. His replacement was 48/ who served in this capacity through October 1967. There was established in CTF a test component known as the during late 1966 and early 1967. Staffing 25X1A and training people selected for was an extensive program in itself, involving development of working tools such as a subject indexing schedule, an organization/ facility dictionary and a location dictionary for place names. Manuals were also prepared to describe what files OCR had, how to query them, as well as CAPRI, in order to further train people. 44/ ILLEGIB

4. Related Activities

On 29 January 1965, the Chief of the Machine Division presented to the AD/CR a comparison between his existing Unit Record Equipment and possible computer replacement, and recommended that an IBM 360/30 be procured for OCR. 50/ Other possible applications using computers for various OCR Divisions were studied in this connection. It was not easy to convince top management of OCR's need for its own computer. OCR had to prove the advantages - space savings, processing time (faster printing), greater flexibility in /searching and output formats (products), and reduction in EAM equipment rentals at least equivalent to computer rental costs - . in other comproments and therefore being all these outweighed "borrowing time" on the computers at the mercy of their availability. Furthermore, design and implementation would benefit sub-

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In following through on the important decision of having his own computer, the D/CR# on 1 November 1966 requested authorization from the DDI to upgrade OCR EAM equipment to an EDP system after thorough analysis of the costs. 51/ The DDI informed the Chief, Information Processing Staff, O/PPB on 2 November 1966 that he intended

stantially from ready access to proper OCR computer equipment.

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to approve the OCR request but wanted comments from the addressee. 2 OCR received the equipment and in February 1967 the D/CR was able to report under <u>Significant</u>

Accomplishments of OCR July 1965 - December 1966 !

the Agency's punched card information/document retrieval files were upgraded by the acquisition of a 360/30 computer / in December 19667. Security-compartmented document files, machine index records and indexing activities were integrated into a single system.

In May 1966 the Assistant DDI had issued a memorandum to Plans and Technology Officer, OCI, to prepare a study of OCR's document and information retrieval system; the memorandum was modified by further instructions in September 1966. Chaired a study group of 15 people from ORR, OBI, NPIC, OCR and OCI, none of whom dissented from the basic conclusions and final recommendations of the 1 December 1966 study Choosing the OCR File System. An oversimplification of the 25X1A recommendations is that OCR continue with the scheduled pilot operation of 1967 and that the test managers give special attention to possible procedures for effecting indexing economies. Gave shallow indexing as one way to economy.

under continued conditions of budgetary stringency, the funding for will not allow for increase in OCR's personnel ceiling. The test would require OCR to stretch its own personnel hide.....Testing could impose the now unforseen necessity of further service curtailments.

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Later events proved the validity of at least some of the results of the next OCR reorganization.

OCR Divisions prepared massive background source information (all of which took 25X1A valuable time from an already harassed staff) for 25X1A. A consolidation of the 25X1A in September 1966. 55/ It was intended as background material for 25X1A but it also gave any reader an overall view of OCR's reference support services, including basic manpower and cost

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figures, size of files and program costs as of FY1966.

One small experiment, involving the querying of data via a remote console, that OCR was able to participate in was made possible by an offer from DIA to ORD, permitting CIA to participate in the COLEX system experiment of DIA. ORD paid the cost of the installation of the remote console in the CIA Library. 56/ The data base of the COLEX system involved

at one of DIA's contractors For the full text of the documents the Library was provided 400 reels in cassette form, access to which was by a Lodestar viewerprinter. 57/ Thus the requester could query the computer for what he wanted, get the location, and from the reels the Library could produce copies of the document.

The COLEX system was operational from March 1967 to the end of the year but wes E. Organizational Changes in OCR substalled ind limberthance.

To accomodate or whatever future processing and service system involving computer backing would be adopted, OCR/had to maintain as flexible an organizational structure as was possible. With constantly dwindling manpower resources available to it, extensive training programs and concurrent demands for improving services, the survival of OCR was a feat in itself.

25X1A There were three major reorganizations during what might be called the Period", 1963-1967; all have been described in previous chapters of this history. ILLEGIB The 1963 and late 1966 changes were dealt with in Chapter VI; the final one as far as the scope of this paper is concerned, 1967, was treated in Chapter VII. In between

these major changes, there were other attempts at molding the right structure for OCR.

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One of the most interesting of these efforts occurred during the spring of 1965--unfortunately at a time when the AD/CR on special detail to the IG's staff. The AD/CR had requested ideas or the reorganization of CCR and several were prepared, not only by 25X1A -and somewhat later by proposals resulted in extended discussions in the Executive Staff and resulted in the assignment of to undertake studies of proposed Processing and Service elements, designated Groups A and B. 25X1A Group C was concerned largely with the resulted in the transfer of the Acquisitions Branch from the CIA I ibrary 25X1A as described in Chapters VII and VIII. EXA/AD/CR charged with preparation of a study on Group A consisting of the consolidation into one Division of collateral and special indexing for document retrieval, the merger into one Division of the Machine Division and the Machine Branch of the Special Register and the continuation of a Dissemination Division. After discussions with senior CCR personnel and Group B 25X1A (see below), concluded that to place special and collateral document indexing under one management was not feasible as a preand that the consolidation of machine activities proposed did not offer sufficient gain to over-ride the negative impact on SR. He recommended against the proposed Group A reorganization.

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25X1A JA/AD/CR was responsible for the Group B study, beginning with consideration of the establishment of an Information Center to consist of elements from the CIA Library, Special Register 25X1A and This was to be followed by consideration of the two other elements of the Group--the biographic function and a greatly changed library to include graphics, all-source materials and possibly microphotography. After many informal and very profitable group meetings (to which Group A members were also presented a progress report in which he stated that the invited), apparent uniform reaction to both the A and B organizational patterns was negative. The most important factor contributing to this attitude was the question whether input and output should be combined or separated. combined them; the proposed Group A and B reorganization split them. The Information Center concept was not compatible with suggested that the voluminous anning. be digested, and clear and decisive action be Phase II report of taken on it before any major organizational change. 59/ through as a sub-stream in both these reports, as indeed in practically every important paper issued by OCR during these years, was the

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inadequacy of OCR knowledge of what the analyst wanted from the central reference service. This was not for lack of trying by OCR to determine firm guidance in the area, but getting profitable reaction was just as much of a dream as resolving the problem.

The chief benefits from this important exercise resulted from the frank and informal exchanges across divisional lines and helped to dispel a certain amount of parochialism that had tended to develop at the division 25X1A who acked as the study thirt for the Information under the SA/AD/CR's direction, and even branch level. prepared a comprehensive analysis of OCR objectives based on the Chairman's request for a set of "propositions" from each member, "stating the objective." they believed OCR should be pursuing in carrying out its mission--with emphasis upon the needs or areas not...being adequately or efficiently taken These were then to be followed by a consideration of the best 'means' for achieving these objectives, the 'implications for management,' and the method of scheduling proposed changes in organization and procedures." Unfortunately, the timing of this study was bad because of the seeming imminence of the implementation of which as we have shown--proved to be a false 25X1A hope. The Group B report and summary contain many useful and uninhibited observations which may still have relevance to CRS of 1970. It is notable that the reorganization of 1967 finally implemented one of the major proposals of Task Team II in 1958 and repeated in this report, namely the administrative integration of the OCR reference services at a level between

Group A (Processing); Group & (Service); and Group C (Publications); ILLEGIB consistum the consolidawas charged with preparation of a study on Group A EXA/AD/CR | tion into one Dividion of collateral and special indexing for document retrieval, and the merger into one Division of the Machine Division and the Machine Branch of 12115 000 and feel continued in 9 a 0155 curic bry the Special Register. After discussions with senior OCR personnel, and Grap B (subelow) that to place special and collateral document indexing under one management was not 25X1A action, and that the consolidation of machine activities feasible as a preproposed did not offer sufficient gain to override the negative impact on SR. He 25X1A recommended against the proposed Group A reorganization. 58/ **ILLEGIB** was responsible for a study of Group B, consideration of the 25X1A esatblishment of an Information Center to consist of elements from the CIA Library, and very profitable **ILLEGIB** After many informal group meetings, pecial Register and +owhich Group & members uger & 150 in vitel presented a progress report in which he stated that the apparent uniform reaction to both the A and B organizational pattern was negative. The most important Factor contributing to this attitude was the question whether input and output should 25X1ACombined them; the proposed Group A and B reorganizabe combined or separated. tion split them. The Information Center concept was not compatible with suggested that the voluminous Phase II report of blanning. and clear and decisive action be taken on it before any major organizational change.5%Running through as a sub-stream in both these reports, as indeed in practically every important paper issued by OCR during these vears, was the inadequacy of OCR knowledge of what the analyst wants from his central reference service. This was not for lack of trigging by OCR to determine firm guidande in the area, but getting drofitable reaction was just as much of a dream as resolving the problem.

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The Group C proposal on Publications was achieved by the transfer of the Acquisitions Branch from the CIA L brary to the Foreign Documents Division, described in Chapters VII and VIII. Although only the Group C portion of the original proposal to reorganize OCR achieved fuition at this time, many lessons were learned from the useful exercise. The example has also been cited to emphasize the fact that OCR was carrying on its own self-analysis at the sale time preparing, studying, training and planning for the different future.

was completed in July 1967 (Chapter VII). OCR assumed the new identity of Central, the Although alteady morib and as a first had a definite role in this reorganization. Gained from the long and costly in as luncus with it did provide Some insight that were useful to the Annual Report to the President's Foreign Intelligence.

Advisory Board, the Director CRS

stated

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The reorganized CRS incorporates many of the concepts and techniques developed in Project The principal work remaining to be done on involves test and evaluation of the indexing system and its associated CAPRI Automatic Processing and Retrieval of Intelligence) software package.

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Evaluation of the full CAPRI package cannot commence until at least the spring of 1968, the earliest estimated date for delivery of the package. The

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experimental techniques test facility, will perform the required test and

evaluations, the objectives of which will be to determine the technical performance of the indexing system and CAPRI and to determine whether the system is economically realistic under CRS' reduced manning levels.

F. Summary

The facts reported in this chapter proved several points; a) OCR was not lax in converting from EAM to EDP equipment (as some alleged); b) OCR conversion was as rapid as sound judgment and experimentation proved that there was more sophisticated information/document retrieval equipment and system as itable; and c) that the new system had to be sufficiently of improvement over past models to warrant sizable investment in money and dwindling manpower had it entailed.

As far as itself was concerned, certainly no system (with the exception

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of course of Intellofax) that och studied that had as thorough planning, designing

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and testing as did out to Nor is there one that was as well documented. From this

issue documentation, OCS will prepare a more idetailed history of Project 25X1A

Additional factors that affected OCR were a) the frequent and oftenfutile

attempts by OCR to determine analysts' needs for a retrieval system more efficient
than any they had ever seen or much less used; b) the constant pressure on OCR to
reduce its manpower; and c) the manpower reductions in a usually resulted in
increasing the number of analysts, who in turn increased the size of their own files
ILLEGIB perhaps
because they did not understand or were unwilling to query the OCR system.

OCR in turn had to anticipate the potential needs of analysts as it constructed to design flexible indexing systems (in-depth or shallow) trying to interpowers ways by which analysts would request material. One of the major controversies always was whether document retrieval or substantive information retrieval was to be built into the ultimate CRS system. Definitive resolution in this area is still unclear, as is the acceptance by the analysts of shallow indexing.

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the AD/CR in his capacity as Chairman, CODIB, in the report to 30 June 1960 codib-D-23/1 as follows:

41. Attached for your information is a summary case history of the limited test of MINICARD as a substitute for the OCR Intellofax System.

2. Our findings are negative. This conclusion is based only in part on our findings that the MINICARD system would not enable us to give substantially superior reference service over that possible with our present system. Weighing very heavily were the present limitations on staff, on space, and on money; these operating assets have been appreciably reduced since the inception of the MINICARD project. Moreover, this reduction has occurred in the face of an increase in demand for OCR information services generally, but a relative decline in the demand for literature searches.

3. The decision not to adopt MINICARD as an operational system in OCR does not affect in any way the application of this system elsewhere in CIA. MINICARD has been selected by the CIA Photographic Intelligence Center as a subsystem of its data handling system. As a consequence of the OCR decision, MINICARD equipment, spares and supplies will be released to PIC to augment their proposed MINICARD installation.

Development Group and others connected with the test, conducted further investigations into revisions of the Intellofax System. Greater uniformity of coding and greater selectivity as a means of achieving a higher rate of relevance among the documents and experimentation to develop teller reproduction equipment recovered by machine searches, were served areas. In the meantime, some of the other members of the intelligence community were doing their share to help improve and according.

Intellofax coverage. The Department of the Army began providing OCR with Actifilm

copies of some of its intelligence reports; these were compatible with OCR's with Hum', aperture card files and were interfiled. Later in the year, the first major of the compatible with OCR's aperture card files and were interfiled.

ILLEGIB ...(In August 1959) the AD/CR

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presented a CRAG-supported peper to the ND/I remputer Requirements for the DD/I for the DD/I offices.

The paper included possible computer applications to most of the DD/I offices.

The conclusion was "that the current rapid evolution of the computer and the present level of its capabilities in information processing offer significant potential support for and improvement in the DD/I area." Recommendations included A) development staff competence in the computer art, and undertaking an EDPM feasibility study for the DD/I area, "CAMPARA CORSTRONO 2001.16001.09 Commutate 5]

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On 31 May 1961 the AD/CR forwarded to the DD/I a memorandum

computer Needs, in which he stated that he is in general agreement with the report of the DD/I Automation Staff 21 April 1961. He made the following important points 1) if there to be no CIA Computer Center, he strongly opposed the creation of another CIA operational component with responsibility for managing a DDI computing facility, 1) he urger that DDI developments in the EDP field be a part of USIB activities in the area, maintaining the necessary flexibility in line with the CODIB recommendations (3) he recommends that CRAG be given the resonsibility for preparing a draft DDI position on the statement of functions for the CIA Automatic Data Processing Staff, and that CRAG prepare specific short- and long-term objectives for DD/I approval/ and 🎉 although accepting in principle the leadership of the CIA ADP Staff in the exploratory phase of systems development and experimentation in the DDI area, by the same token he recommends that any computing center resulting from

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such exploration be placed as an operating component under AD/CR. 6/

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The DCI has directed that the Central Intelligence Agency shall develop the best possible system for the handling of information, indexing and data processing. He wants the Agency system (or systems) to be the model for the intelligence community, and feels that by this method we will achieve more than through any organizational devices as proposed by SCIPS.

Would you take all necessary steps to implement this and advise me on at least a monthly basis.

On 15 May 1964 the DD/S&T requested clarification of the above Action

Memorandum, and in his reply the Executive Director stated on 22 May 1964; the

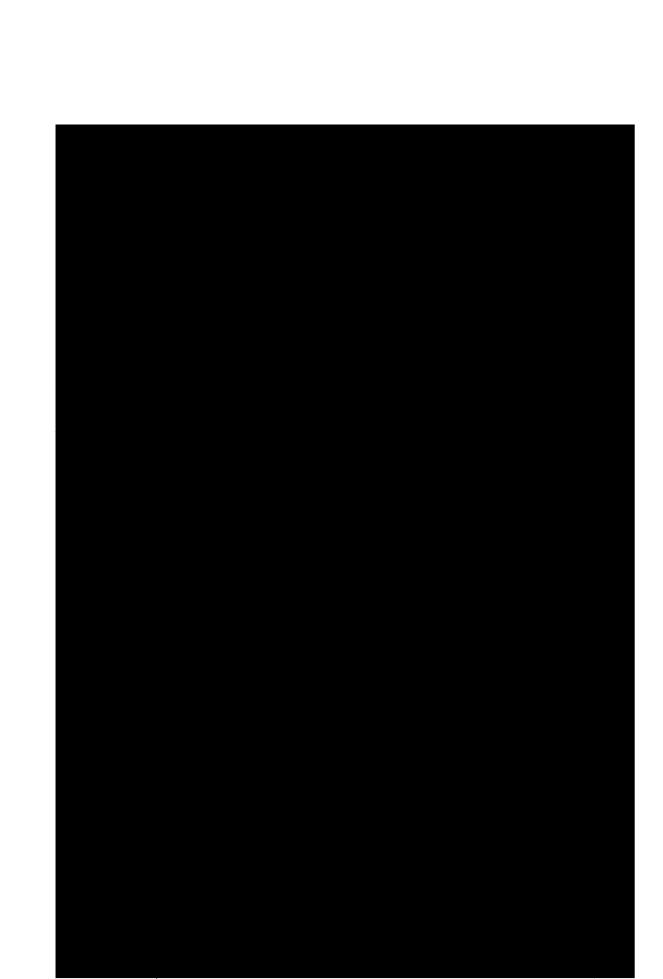
will resolve conflicts which may arise from competition for scarce resources.\* 191

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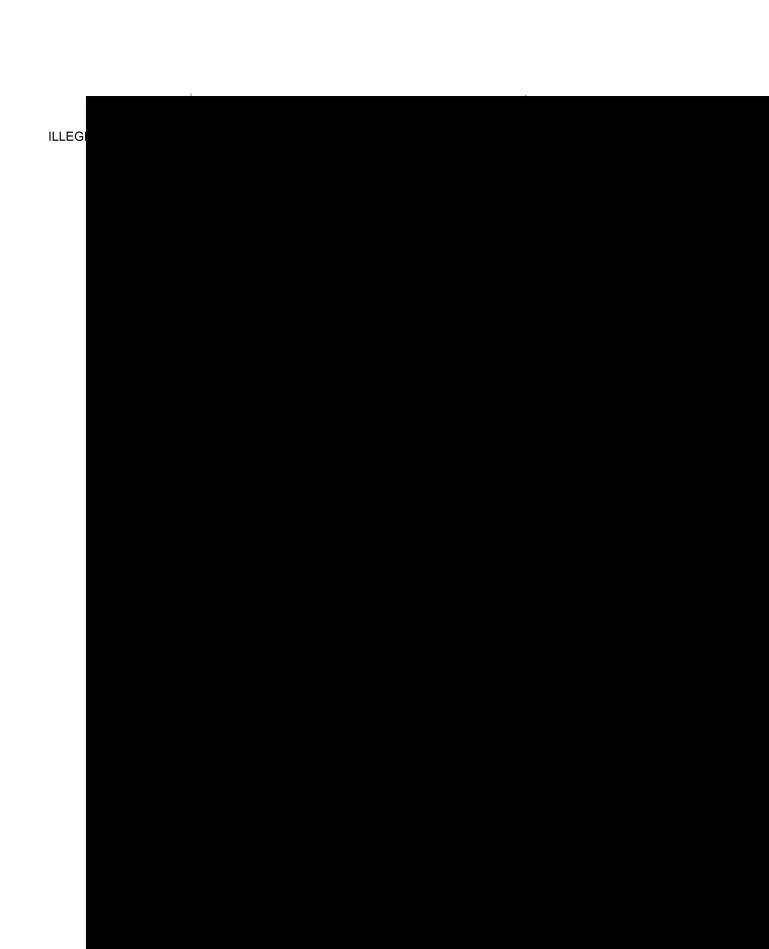
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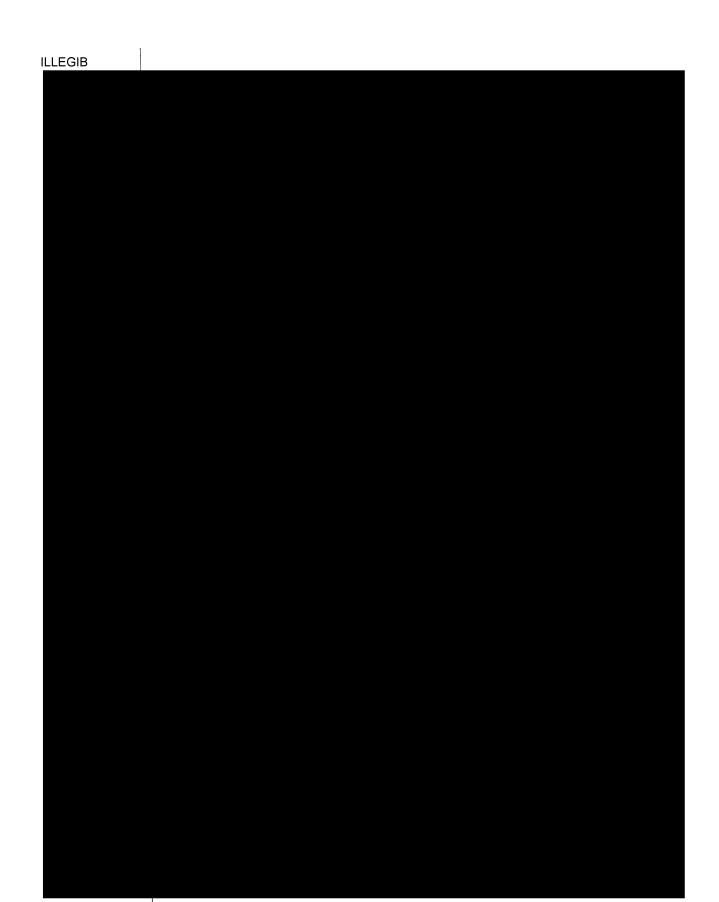
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In following through on the important decision of having his own computer, the D/CR presented a memorandum 1 November 1966 to the DD/I, requesting authorization to upgrade OCR EAM equipment to an EDP system after thorough analysis of costs. The DD/I forwarded a memorandum to Chief, Information Processing Staff, O/PPB on 2 November 1966 indicating that he intends to approve the OCR request but wants comments from the addressee 52 At any rate, the D/CR on 6 February 1967 was able to report under Significant Accomplishments of OCR July 1965-December 1966 that "The Agency's punched card information/document retrieval files were upgraded by the acquisition of a 360/30 computer. Security-compartmented document files, machine index records, and indexing activities were integrated into a single system." 53/

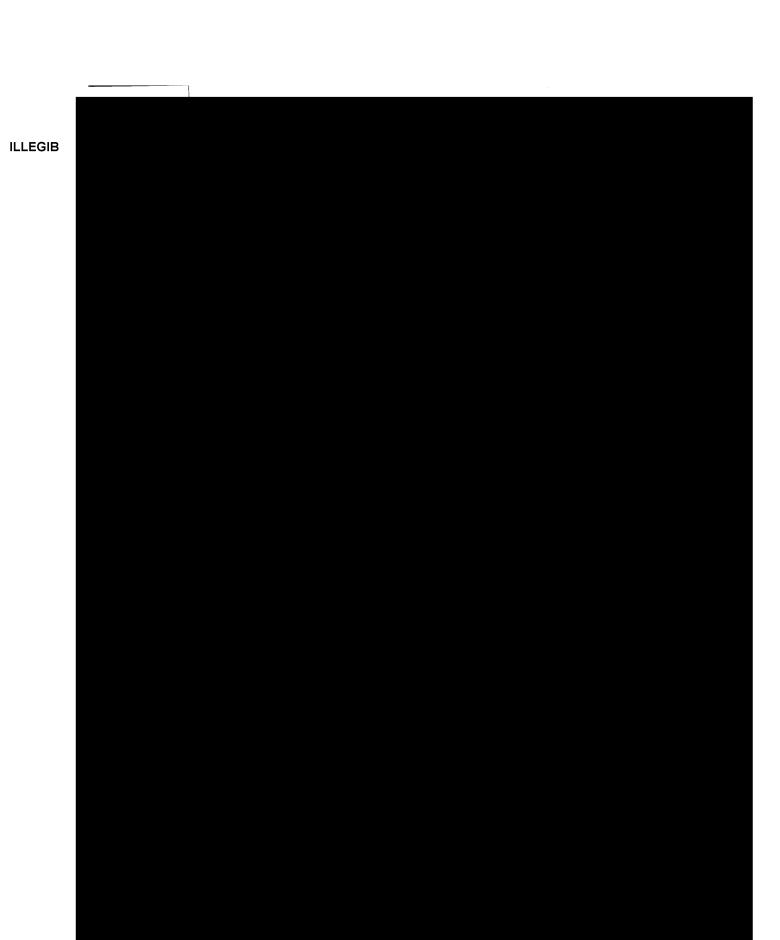
Approved For Release 1999/09/24 : CIA-RDP84-00951R000200110001-9 In May 1966 the Assistant DD/I had issued a memorandum to 25X1A , Plans and Technology Officer, OCI, to prepare a study of OCR's Document and Information Retrieval System, a modified by oral instructions on 25X1A chaired a study group of 15 persons from ORR,OBI, NPIC, OCR and OCI, none of whom dissented from the basic conclusions and final 1 December 1966 54/ recommendations of the study, Choosing the OCR File System. An oversimplification of 25X1Acommendations is that QCR continue with the schequiled pilot operation in 1967 and that the test managers give especial attention to possible procedures for effecting indexing economies. Zlatnick gives shallow indexing as "under confinued one way toward economy. He also admits that tous conditions of budgetary stringency,  $25 \times 1A$ the funding for will not allow for increase in OCR's personnel ceiling. The test would require OCR to stretch its own personnel hide.....festing could impose **ILLEGIB** prove the validity of at least some of points, Incidentally, OCR prove the validity of at least some of points, Inchentally, OCR was letter to become the massive background source information (all of which took **ILLEGIB** valuable time from an already harassed staff) for  $\theta \in \mathcal{R}$ 

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